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Patent Application of

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For

**Stripping Tool for the Removal of Paint, Fiberglass, Epoxy, and resin
from Two Surfaces Simultaneously**

Abstract

A tool for simultaneously resurfacing by cutting the face and overlying butt portions of shingles or clapboards forming the outside surface of a house or the like. The tool is mounted in a rigid guard housing/dust collector that allows for adjustment of the cutting blades to both surfaces and provides an attachment for work debris removal

Claims

We claim:

1. We claim a rotary tool for resurfacing or removal of lead paint from two work surfaces simultaneously such as painted shingles or clapboard walls, defining a generally flat oriented surface and an adjacent overlying horizontal or perpendicularly oriented minor surface or butt end; said tool consists of three major components:
 - a. A rotating bar style holder with two replaceable blades, said bar holder is attached onto a drive shaft of a motor drive
 - b. A rigid guard housing/dust collector which encloses the rotating bar holder and provides protection for the operator and a connection to a vacuum system
 - c. A vacuum source
2. A combination rigid guard/dust-collecting device, as described in claim one, encapsulating and adjusting the blade exposure

for a bar style blade holder that simultaneously resurfaces the two adjacent surfaces of clapboards or shingles comprising:

- a. an attachment means for connecting said rigid guard/dust-collecting device to a motor drive providing power to the bar style blade holder;
 - b. a rigid chamber means to encompass the bar style blade holder and provide an attachment means to a vacuum source to remove debris from the work surface, while providing openings for the cutting, grinding or sanding edges to prepare the said surfaces;
 - c. an adjustment means fixed to the rigid chamber to control the amount of depth of the cutting device to the horizontal surface being treated;
 - d. an adjustment means fixed to the rigid chamber to control the amount of depth of the cutting device to the vertical surface being treated.
3. A rotary tool as described in claim one, where the rotating bar style holder is designed to hold two replaceable cutting blades at a 1-20 degree angle off the perpendicular where the top end of the replaceable blade is away from the direction of rotation and the point of the blade that meets the horizontal work surface is facing towards the direction of rotation and the flat surface of the blade is parallel to the butt end of the clapboard or shingle;
 4. Two replaceable blades as described in claim three that are in a planar parallelogram shape so that when there are inserted in the bar style holder, the point of the blade is directed at the generally flat oriented surface and the straight edged side is parallel to the butt end of the shingle or clapboard to be resurfaced

Description

Field of the Invention

The invention is generally related to a device which is used for stripping of paint, fiberglass, epoxy, and resin coating from wood, steel, laminates, concrete blocks and most surfaces.

Background and Objects of the Invention

There are many methods such heat, chemicals, various tools for stripping paint and coatings from wood, fiberglass, steel, resin surfaces. Electric heat plates and open flames are dangerous and could cause fires. Additionally, where lead paint and pressure treated lumber is involved, heavy metals can be released into the environment and health risks ensue. Chemicals are time consuming and expensive requiring neutralization of the stripped surface. Another method such as abrasive sheets (sandpaper) uses friction and abrasion of hard particulate matter against the coating to be removed. Such removal methods causes clogging of the sandpaper, down time, and sandpaper replacement at a considerable cost. Other methods used are manual wire brushing and manual scraping, both are labor intensive and can cause damage to the wood, fiberglass, steel, and resin surfaces.

With regard to the removal of lead paint and other surfaces where heavy metals and other toxic substances are involved, many methods are unavailable due to the release of paint dust and chips into the environment.

This device seeks to allow the operator to resurface close into confining areas of a work surface such as butt ends of shingles and clapboards, into side areas around door and window trim while simultaneously working two surfaces and simultaneously removing resurfacing debris.

There are many prior art rotary-resurfacing tools on the market, but they are cumbersome to handle and are unable to clean coatings from corner areas next to window or doorframes. Some examples are discussed below.

The Zayat #4,554,957 Rotary Resurfacing Tool claims a device cable of resurfacing two surfaces with a rotary disc. The tool is also designed to simultaneously to remove a coating from the horizontal surface and underside or butt end of shingles or clapboard.

Courson, #5,609,516, claims a power tool with abrasive sheets enclosed by a circular shroud covering. The shroud covers the abrasive sheets allowing the collection of dust by a vacuum system.

Duncan, #5,791,979, claims a vacuum shroud covering a grinding tool. The flexible bonnet surrounding the grinding disc allows for the collection of stripped debris into a vacuum.

Stewart, #6,027,399, claims a grinding tool accessory shroud for containing and removing dust into a vacuum. The grinding tool accessory has flexible bristles with two chambers, the inner chamber collects the dust and the outer chamber flexes for contoured portions of a work surface.

Tanner, #4,765,099, claims a sanding and dust collecting apparatus that consists of a flexible curtain for containment of dust around a sanding disc.

Dehde et al., #6,148,880, describes a flat surface-milling machine with two or more cutters, but no dust removal system and it can only grind on surface at a time.

Partington, # 4,337,811, Walsh, #3,731,338, and Schultze, #6,190,09 all describe circular rotary planers or grinders with no ability to simultaneously grind tow surfaces and no dust removal system.

Sarantits, #6,491,575, describes a rotary tool with replaceable blades that can resurface two surfaces simultaneously, a semi rigid guard and it does have a dust collection system. The cutting depth of the horizontal work surface is set by ball bearings and the dust collection system is a shroud surrounding the entire work surface. This differs from the invention in this application in that the vacuum/dust collection system is part of the rigid guard housing and because of this design, the operator is able to get closer into corners, the tool is less cumbersome and reduces operator fatigue.

This rotary stripping tool is designed to meet several objectives. The rigid guard housing/dust collector combines the function of two parts on other tools, a guard and a dust-collecting shroud. The bottom of the rigid guard housing/dust collector is set at a slight offset angle of ten degrees. This and the height adjustment screw allow the operator to set the optimal cutting depth for the horizontal surface. Likewise, the side adjustment screw seated on the rigid guard housing/dust collector maximizes space utilization on the tool. Finally, using only two blades on the bar style holder, weight and drag are minimized allowing a smaller, lighter motor to be used with the tool.

In short, the weight reduction in this tool, the ability to reach further into tight corners and the ability to simultaneously work two surfaces reduces operator fatigue and accomplishes more stripping than other devices.

Summary of the Invention

The present invention provides a means of stripping and removing paint and debris from shingles or clapboard. While other devices claim to do the same, this invention is a clear improvement over those devices in that it easily fits into corners, presents a smaller head area to the surface and contains less moving parts so to improve its movement and to reduce operator fatigue.

Description of the Invention

The drawings, figures 1-6, illustrate the best mode of the invention presently contemplated. In the drawing all of the same elements are labeled with the same number.

Figure 1 is an exploded side view of the invention paint remover and resurfacing tool showing the novel rigid guard housing/dust collector, bar style holder and motor drive.

Figure 2 is a side view of Figure 1 showing the adjustment screw for depth adjustments to stripping action for horizontal surface.

Figure 3 is the underside view showing the bar style blade holder inside the rigid guard housing/ dust collector with the bar style blade holder positioned so the invention can strip adjacent vertical surfaces and into corners. Adjustment screw head 33 is located next to the opening of the rigid guard housing/dust collector for vertical adjacent surfaces.

Figure 3A is the view showing the top opening of the rigid guard/dust collector for resurfacing the butt end of shingles or clapboard. The bar style blade holder, blade and height and side adjustment screws are visible.

Figure 4 shows the stripping tool removing coating off shingle with the hose attachment for removing stripped paint and coating into a vacuum source.

Figure 5 shows the invention stripping on the main/horizontal surface up to a window or doorframe on the right side of the operator

Figure 6 is the invention stripping the surface of clapboard to a window or doorframe located to the left of the operator.

Detailed Description of the Drawings

Figures 1, 2, 3, 3A, 4, 5 and 6 show the device 2 of the present invention, which is hand-held and placed against wood singles or clapboard, fiberglass or metal surfaces.

Figure 1 is an exploded side view of the device 2, which comprises an electric drive motor 6 with a 90-degree angled drive shaft 8 connected to a bar style blade holder 10 with two replaceable blades 12. A base plate 18 is attached to the motor drive 6 with two long screws 24 and two short screws 24A with four bushings 16 of equal size and a spacer washer 28. With the two long screws 24, two more bushings 16A are used as spacers for attaching the top 4A of the rigid guard housing/dust collector. The top 4A of the rigid guard housing/dust collector has a vacuum hose attachment 7. The top of the rigid guard housing dust collector is attached by means of four screws, not shown, to the rigid guard housing/dust collector 4. The rigid guard housing/dust collector has both a top opening and a bottom opening. The horizontal adjustment screw 14 allows the operator to adjust the depth of the blades to the horizontal surface of the surface to be resurfaced.

Figure 2 is a side view of the device 2 showing the motor drive 6 with the 90-degree driveshaft unit. The horizontal adjustment screw 14 and the lock nut 20 and their relation to the base plate 18 and the rigid guard housing/dust collector 4 are visible. When the horizontal adjustment screw 14 is turned, the side of the rigid guard housing/dust collector will move up and down with respect to the fixed base plate 18 and bar style blade holder inside the rigid guard/dust-collector 4, controlling the protrusion of the blades 12 below the rigid guard housing 4.

Figure 3 is a view looking up into the bottom opening of the rigid guard housing/dust collector 4. The heads of the base plate mounting screws 24 are visible and the horizontal adjustment screw 14 on the opposite side is visible. The bar style blade holder 10 with its angled slots for the replaceable blades 12 is also displayed. The angled slots hold the blades in such a way that little of the blade point touches the horizontal surface to be treated. This reduces drag and effort on the part of the operator. The side adjustment screw 33 is also visible and this adjusts the amount of blade

surface touching the butt end of a shingle or clapboard being resurfaced. The cut-away view shows the plenum chamber in the rigid guard dust collector leading to the vacuum attachment

Figure 3A is the view of the top opening of the rigid guard housing/dust collector. Visible is the bar style blade holder 10 with the angled replaceable blade 12. The side adjustment screw 33 and the height adjustment screw located inside the lock nut 20 are visible. The top opening has a carriage bolt adjustment screw 33 adjacent to it to allow the operator to adjust the amount of depth the side edges of the replaceable blades 12 to meet the butt end of a clapboard or shingle for resurfacing. The bottom of the rigid guard housing/dust collector has a ten-degree slope from the side of the side adjustment screw angling up to the opposite side. This allows the tips of the replaceable blades 12 in the bar style blade holder 10 to protrude from the circular opening for 180 degrees of arc. This ten-degree angle and A horizontal line 44 is displayed to give a reference point for the ten degree sloped bottom of the rigid guard housing/dust collector 4. An arc with arrows is also displayed to show the rotation of the rigid guard housing/dust collector 4 in relation to the height adjustment screw 14 and the replaceable blades 12.

Figure 4 is a view of the device in operation removing coating 16 from the surface 22. The rigid guard housing/dust collector 4 is placed on the top of a course of shingle or clapboard with the open side of the rigid guard housing/dust collector 4 placed against the short butt end of the shingle or clapboard 34. The side adjustment screw 33 is also placed against the butt end of the work surface 22 so that two surfaces can be worked simultaneously and the resulting debris can be removed.

Figure 5 shows the device 2 removing coating 16 on surface 22 when the device comes next to an adjacent window or door trim 30 located to the right of the device.

Figure 6 shows the device removing coating 16 from surface 22 when it comes to trim 30 located to the left of the device. Note that the side opening of the rigid guard housing/dust collector is next to the trim.

While there is shown and described herein certain specific structures embodying the invention, it will be obvious to those skilled in the art that various modifications and rearrangements of the parts may be made with

departing from the spirit and scope of the underlying inventive concept and that the same is not limited to the particular forms herein shown and described except insofar as indicated by the scope of the appended claims.